BLM LIBRARY
88064042

RIO BLANCO OIL SHALE PROJECT

MODULAR DEVELOPMENT PHASE

REGULAR RECLAMATION PERMIT APPLICATION

(VOLUME II)

SEPTEMBER, 1977

88064042

BLM Library
D-553A, Building 50
Denver Federal Center
P. O. Box 25047
Denver, CO 80225-0047

TN
859
.C64
R5652
1977
v.2

RIO BLANCO OIL SHALE PROJECT

MODULAR DEVELOPMENT PHASE

REGULAR RECLAMATION PERMIT APPLICATION

(VOLUME II)

SEPTEMBER, 1977

Submitted to

COLORADO MINED LAND RECLAMATION BOARD

c/o MS. MAGGIE KOPERSKI

RECLAMATION SPECIALIST

by

RIO BLANCO OIL SHALE PROJECT

Gulf Oil Corporation
and
Standard Oil Company (Indiana)

LIST OF FIGURES

MODULAR DEVELOPMENT PHASE
REGULAR RECLAMATION PERMIT APPLICATION

VOLUME II

EXHIBIT B

Figure Number	
B-1	Index Map: Location of Tract C-a and Surrounding Five Mile Environmental Study Area
C-1	Surface Ownership, Tract C-a
C-2	MDP Mining, Processing Facilities and Surface Water Sources
C-3	Tract C-a Areas Disturbed by Year
C-4	Tract C-a Present Vegetation
C-5	Soil Types
C-6	Topsoil Depth in Centimeters
D-1	MDP Mine Layout Sketch, Preliminary
F-1	Tract C-a Areas REclaimed by Year
J-1	Location and Extent of Vegetation Types on Tract C-a and Vicinity

R102W

R101W

R100W

R99W

R98W

HWY. 64

HWY. 64

RANGELY

T1N

T1N

T1S

T1S

T2S

T2S

ROAD

PASS

DOUGLAS

5 MILE PERIMETER ENVIRONMENTAL STUDY AREA

CORRAL GULCH PIPELINE CORRIDOR

MDP MINING & PROCESSING FACILITIES

Tract C-a

CORRAL GULCH RESERVOIR

MLRB PERMIT AREA

5 MILE PERIMETER ENVIRONMENTAL STUDY AREA

CORRAL GULCH PIPELINE CORRIDOR

MDP MINING & PROCESSING FACILITIES

CORRAL GULCH RESERVOIR

Tract C-a

MLRB PERMIT AREA

ROAD

PASS

DOUGLAS

T1S

T2S

T3S

R102W

R101W

R100W

R99W

0 2 4 MILES

SCALE: 1"=4000'

RIO BLANCO OIL SHALE PROJECT

RIO BLANCO COUNTY, COLORADO

INDEX MAP:

LOCATION OF TRACT C-a & SURROUNDING FIVE MILE ENVIRONMENTAL STUDY AREA

DRAWN BY:	SCALE: 1"=4000'	FIGURE B-1
DESIGN BY:	DATE: 9/14/77	
APPROVED BY: PWM	DRAWING NO.	
	FILE:	

R99W

JEEP

7425x

7400

7360

7200

7000

6900

6800

6942x

CORRAL GULCH RESERVOIR

Carter — Oil Co.

32

34

3

RBOSP

Hunting Club

MDP MINING & PROCESSING FACILITIES

TRACT C-a

Corral

JEEP

Spring

Gulch

Eldar

7319

7150

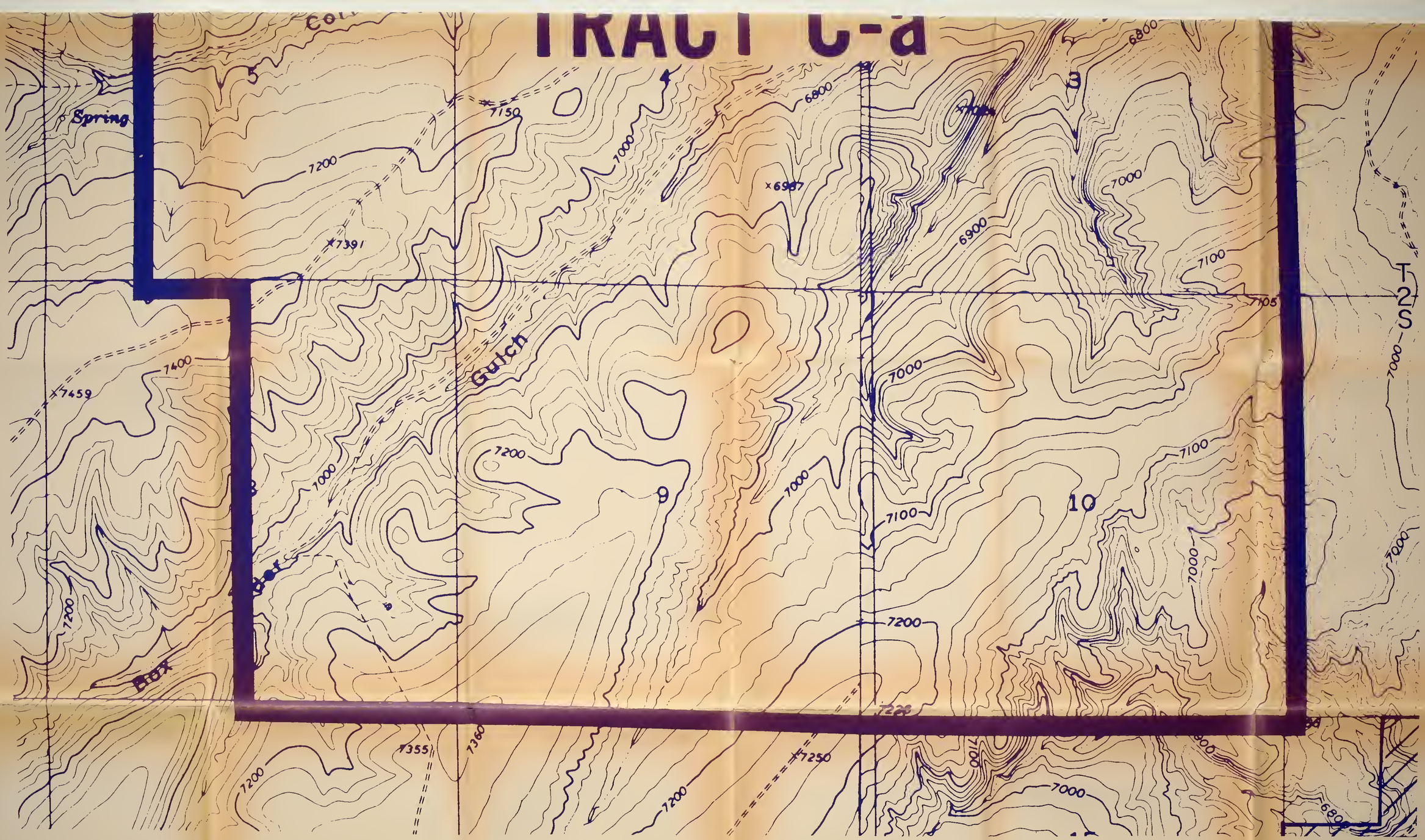
6987

7391

7105

T 2 S

TRACT C-a



0 2500
FEET
1"=500'

LEGEND

- PRIVATE LANDS
- STATE FISH & WILDLIFE LANDS
- BUREAU OF LAND MANAGEMENT LANDS

RIO BLANCO OIL SHALE PROJECT
RIO BLANCO COUNTY, COLORADO

SURFACE OWNERSHIP

DRAWN BY:	SCALE: 1"=500'	FIGURE C-1
DESIGN BY:	DATE: 9/14/77	
APPROVED BY: PWM	DRAWING NO:	
	FILE:	

E 146,000 E 150,000 E 156,000 E 162,000 E 166,000

N 233,000 N 228,000 N 223,000

DRY FORK

CORRAL

GULCH

ELDER

GULCH

G-S M-1

CE 701
TO 2

G-S 2-3

G-S 1

CE 707

CE 709

MDP MINING & PROCESSING FACILITIES

EXHAUST VENTILATION SHAFT

SERVICE-PRODUCTION SHAFT

COMBUSTION AIR SHAFT

RETORT 1
RETORT 3A
RETORT 3
RETORT 5
RETORT 5A

EVAPORATION FIELD

STORAGE FACILITIES

STORAGE FACILITIES

FIRST AID TRAILER

TO CE 3 702

VISITORS CENTER

G-S 4-5

G-S 6

CE 708

G-S 9

CE 703

G-S 7

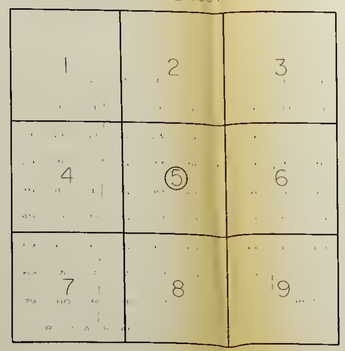
TO CE 1 705A

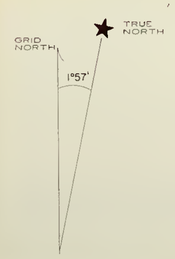
G-S 8

G-S 10

MUNSON

SHEET LAYOUT





ALL INFORMATION CONTAINED ON THIS MAP IS OF A PROPRIETARY NATURE AND SHOULD NOT BE REPRODUCED WITHOUT WRITTEN AUTHORIZATION FROM THE RIO BLANCO OIL SHALE PROJECT.

500 250 0 500 1000 1500 2000

Scale: 1" = 500'

CONTOUR INTERVAL 5 ft.

LEGEND

- HORIZONTAL & VERTICAL CONTROL
- VERTICAL CONTROL
- HORIZONTAL CONTROL
- DRILL HOLE
- PROPERTY CORNER
- PICTURE CENTER
- SECTION CORNER
- 1/4 CORNER
- SPOT ELEVATION
- INDEX CONTOUR
- INTERMEDIATE CONTOUR
- CONTOUR THRU HEAVY VEGETATION
- DEPRESSION
- PERENNIAL STREAM
- INTERMITTENT STREAM
- DITCH
- POND
- WASH
- CULTIVATION
- GRADED ROAD
- DIRT ROAD
- JEEP TRAIL
- TRAIL
- CULVERT
- FENCE
- FENCE (POSSIBLE)
- GATE
- CORRAL
- PIPE LINE
- BUILDING
- FOUNDATION
- EARTH DAM
- UTILITY POLE
- TREES
- SCATTERED TREES

REVISIONS

NO.	DESCRIPTION	DATE	BY
	Updated Photogrametric Detail Utilizing Photograph Obtained 9-3-74 Added Dirt Haul and Control	MAY 1975	L C E

RIO BLANCO OIL SHALE PROJECT
MAP OF TRACT C-a AND VICINITY

MDP MINING, PROCESSING FACILITIES & SURFACE WATER SOURCES

FIGURE C-2

TOPOGRAPHIC MAPPING OF TRACT C-a FEDERAL OIL SHALE LEASE NO. C-20046 AND PORTIONS OF TOWNSHIPS 1&2 SOUTH, RANGES 98, 99&100 WEST RIO BLANCO COUNTY, COLORADO

NOTE: COMPILED BY PHOTOGRAMMETRIC METHODS FROM 1:12,000 TOPOGRAPHY OBTAINED JUNE 1974 WITH AN RC 8 CAMERA OF 152.74mm FOCAL LENGTH. HORIZONTAL CONTROL SURVEYS REFERRED TO THE COLORADO STATE PLANE COORDINATE SYSTEM, NORTH ZONE MODIFIED TO 7,700 FT. DATUM, LAMBERT CONFORMAL CONIC PROJECTION. VERTICAL CONTROL SURVEYS RELATED TO MEAN SEA LEVEL.

SHEET 5 OF 10

MORRISON - KNUDSEN COMPANY, INC.

620-1-25-22

NM-1

AM-3

CE-708

CE-707

TO-2

G-S 11

NR-1

G-S 2-3

NR-2

NR-1

NR-3

AM-2A

CE-705-A

G-S 4-5

BOX ELDER GULCH

RINKY DINK GULCH

CORRAL GULCH

POWER LINE CORRIDOR

DIVERSION DITCH

RUNOFF DITCH

MINE SERVICE AREA

FIRE SERVICE RETENTION POND

FLOW DOWN WATER POND

RUNOFF DITCH PROCESS AREA

DEWATERING COLLECTION POND

EVAPORATION FIELD

DEWATERING INJECTION POND

ORE DISPOSAL PILE

SOIL STORAGE PILE

RUNOFF DITCH

NOTE: PIPE LINE & SERVICE ROAD DISTURBED AREAS NOT SHOWN, TYPICAL

REVISIONS

ISSUED "A" FOR RECLAMATION PLAN
T.L. H. Grant DATE: 9 SEPT 77

LEGEND

- MINE ROAD
- NEW SERV. & ROAD
- JEEP TRAIL (EXISTING)
- UPGRADED SERVICE ROAD
- INJECTION WELL PIPING
- INJECTION WELL
- BORE HOLE (EXISTING)
- MONITOR WELL
- 1977
- 1978
- 1979

SCALE: 1"=500'

RIO BLANCO OIL SHALE PROJECT
RIO BLANCO COUNTY, COLORADO

AM-3
CE-707
G-S II
G-S 2-3
NR-1
NR-2
NR-3
AM-2A
CE-705-A
G-S 10
NR-5
G-S 15
G-S 6
G-S 4-5
CE-702
VISITORS CENTER
(SAFETY TRAILER)
BOX ELDER
GULCH
CORRAL
FORK
RINKY
DINK
POWER LINE CORRIDOR
DIVERSION DITCH
RUNOFF DITCH
FIRE SERVICE RETENTION POND
BLOW DOWN WATER POND
PROCESS AREA
DEWATERING COLLECTION POINT
EVAPORATION FIELD
SPENT SHALE DISPOSAL PILE
SOIL STORAGE PILE
EXPLOSIVES MAGAZINE
NOTE: PIPE LINE & SERVICE ROAD DISTURBED AREAS NOT SHOWN TO SCALE

LEGEND
- ACCESS ROAD
- NEW DIRT ROAD
- JEEP TRAIL (EXISTING)
- UPGRADED SERVICE ROAD
- INJECTION WELL PIPING
- INJECTION WELL
- BORE HOLE (EXISTING)
- MONITOR WELL
- 1977
- 1978
- 1979

SCALE: 1"=500'

RIO BLANCO OIL SHALE PROJECT
RIO BLANCO COUNTY, COLORADO

TRACT C-a
AREAS DISTURBED BY YEAR

SITE PLAN

MORRISON - KNUDSEN COMPANY, INC.
TWO MORRISON-KNUDSEN PLAZA / P.O. BOX 7808 / BOISE, IDAHO 83729

FIGURE C-3

DRAWN BY	APPROVED BY	CONTRACT NUMBER
D. BEAN 8-25-77		1104
CHECKED BY	SCALE 1" = 500' AS NOTED	SHEET NUMBER 22-52-1-029

DEPT.	ARCH.	STRUCT.	MECH.	ELECT.	P & I	PIPING	SAF./ENS.	P. E.
INIT.								
DATE								

MORRISON - KNUDSEN COMPANY, INC

R 99 W

TRACT C-a

T 1 S

MDP MINING &
PROCESSING FACILITIES

T 2 S

0 2500

FEET

1"=500'

TERRESTRIAL ECOLOGICAL INVESTIGATIONS
RIO BLANCO OIL SHALE PROJECT

HABITAT TYPES

1	DOUGLAS FIR	6	PINYON-JUNIPER SAGEBRUSH	11	SHADSCALE
2	ASPEN	7	UPLAND SAGEBRUSH	12	RIPARIAN
3	MIXED BRUSH	8	BOTTOMLAND SAGEBRUSH	13	BALD
4	PINYON-JUNIPER	9	RABBITBRUSH	14	AGRICULTURE
5	PINYON-JUNIPER MIXED BRUSH	10	GREASEWOOD		

RIO BLANCO OIL SHALE PROJECT
RIO BLANCO COUNTY, COLORADO

TRACT C-a
PRESENT VEGETATION

DRAWN BY:	SCALE: 1"=500'	FIGURE C-4
DESIGN BY:	DATE: 9/14/77	
APPROVED BY: PWM	DRAWING NO:	
	FILE:	

R 99 W

TRACT C-a

MDP MINING & PROCESSING FACILITIES

T 1 S

T 2 S

32 33 34 35 36

5 4 3

63 X63 RT 41 66 73 74

LEGEND FOR SOIL SERIES

38	HAVRE	66	REDCREEK-RENTSAC COMPLEX
41	GLENDIVE	73	YAMAC
61	CASTNER	75	RIVRA
63	RENTSAC	RT	ROCK OUTCROP-TORRIORTHENT COMPLEX
		X63	RENTSAC-PICEANCE COMPLEX

RIO BLANCO OIL SHALE PROJECT
RIO BLANCO COUNTY, COLORADO

SOIL TYPES

DRAWN BY	SCALE 1"=500'	FIGURE C-5
DESIGN BY	DATE: 9/14/77	
APPROVED BY PWM	DRAWING NO	

FILE

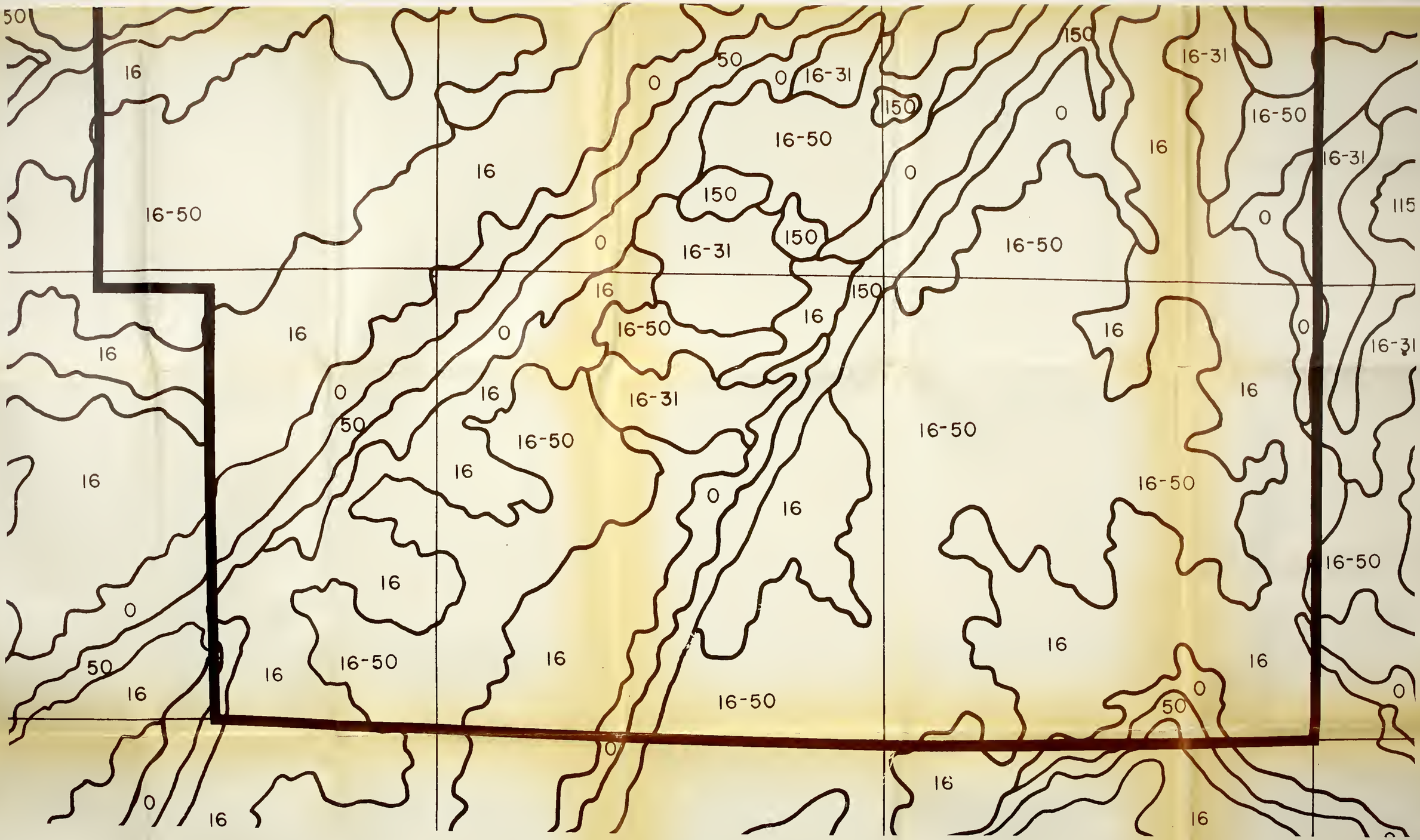
R 99 W

TRACT C-a

MDP MINING & PROCESSING FACILITIES

T 1 S

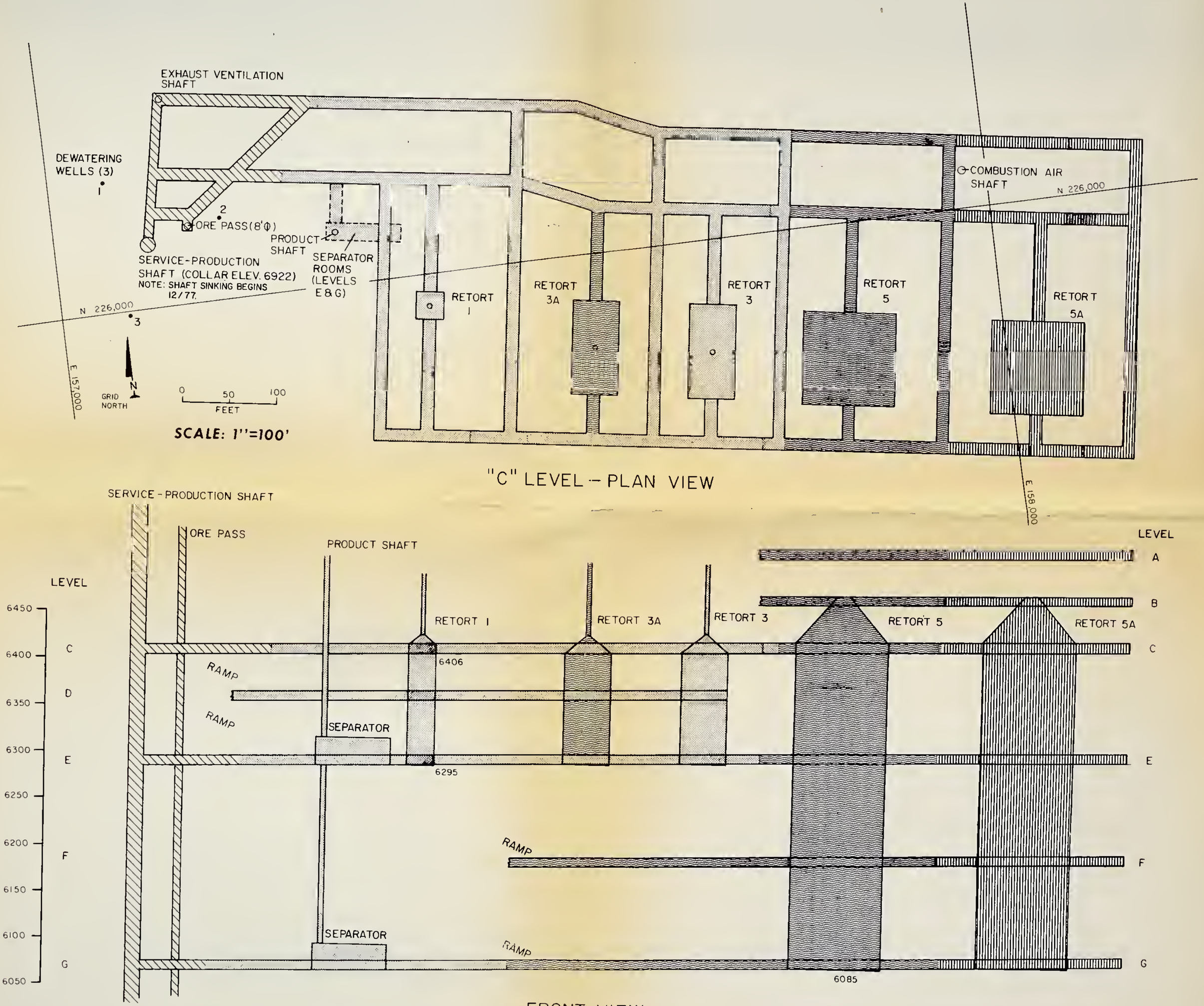
T 2



RIO BLANCO OIL SHALE PROJECT
RIO BLANCO COUNTY, COLORADO

TOPSOIL DEPTH IN CENTIMETERS

DRAWN BY:	SCALE: 1"=500'	FIGURE C-6
DESIGN BY:	DATE: 9/14/77	
APPROVED BY PWM	DRAWING NO:	
	FILE:	



MDP MINING SCHEDULE 1977 TO 1981

1977 – SHAFT SINKING BEGINS 12/77

- 1978
- 1979
- 1980
- 1981

COORDINATES (APPROXIMATE)

	NORTH	EAST
EXHAUST VENT. SHAFT	226,220	157,130
SERVICE-PROD. SHAFT	226,070	157,700
COMBUSTION AIR SHAFTS		
RETORT 1	225,965	157,390
RETORT 3	225,880	157,635
RETORT 3A	225,900	157,560
RETORTS 5 & 5A	226,040	157,975
RETORT CENTERS		
RETORT 1	225,155	157,190
RETORT 5A	225,820	158,000
PRODUCT SHAFT	226,055	157,800

FIGURE D-1

RIO BLANCO OIL SHALE PROJECT
RIO BLANCO COUNTY COLORADO

MDP MINE LAYOUT SKETCH
PRELIMINARY

DRAWN	TKM	SCALE	
DESIGNED		DATE	9-9-77
SUPERVISED	PWM	DRAWING NO.	

MORRISON - KNUDSEN COMPANY, INC

22-32-1-030

REVISIONS

PHYSICAL LAND RECLAMATION PLAN

AM-3

AM-2A

G-S 11

NR-1

NR-2

NR-3

CE-708

CE-707

CE-705-A

TO-2

G-S 2-3

G-S 4-5

POWER LINE CORRIDOR

SOIL STORAGE PILE

SLOPE = 3:1

BOX

CLIVER

RINKY

GULCH

1978 - RANGELAND / WILDLIFE HABITAT

1982-1983 INDUSTRIAL (SEE TEXT)

SCALE: 1"=500'

PIC BLANCO OIL SHALE PROJECT

TRACT C-a

AM-3

CE-708

CE-707

G-S 11

G-S 2-3

NR-1

NR-2

NR-1

NR-3

AM-2A

CE-705-A

G-S 10

NR-5

G-S 15

G-S 6

G-S 4-5

CE-702

POWER LINE CORRIDOR

SOIL STORAGE PILE

SLOPE = 3:1

ROX

ELDER GULCH

RINKY TINK

CHIMNEY GULCH

1978 - RANGELAND / WILDLIFE HABITAT

1982-1983 INDUSTRIAL (SEE TEXT)

SCALE: 1"=500'

PIC BLANCO OIL SHALE PROJECT

RIO BLANCO COUNTY, COLORADO

TRACT C-a

AREAS RECLAIMED BY YEAR

SITE PLAN

MORRISON - KNUDSEN COMPANY, INC.

FIGURE F-1

TWO MORRISON-KNUDSEN PLAZA / P.O. BOX 7808 / BOISE, IDAHO 83729

DRAWN BY	APPROVED BY	CONTRACT NUMBER
CHECKED BY	SCALE	SHEET NUMBER

1104

22-52-1-030

DEPT.	ARCH.	STRUCT.	MECH.	ELECT.	P&I	PIPING	SAF.DES.	P. E.
INIT.								
DATE								

MORRISON - KNUDSEN COMPANY, INC

Form 1279–3
(June 1984)

BORROWER'

TN 859 .C64 R56

Rio Blanco Oil
modular develo

DATE LOANED	BORROWER

USDI – BLM